

20030109.qrp v02_n795.qrl.20030109

Date: Thu, 9 Jan 2003 19:03:09 EST
From: qrp-l@Lehigh.EDU
To: "Low Power Amateur Radio Discussion" <qrp-l@Lehigh.EDU>
Subject: QRP-L digest 2795

QRP-L Digest 2795

Topics covered in this issue include:

- 1) [144315] FOX: K9DC 01/09/2003
by Dave Gingrich K9DC <gingrich2@dcg.org>
- 2) [144316] *wow*...what a surprise
by john <johnmb@nc.rr.com>
- 3) [144317] Please use "SPOT:" for your DX spots.
by Paul Valko <w8kc@comcast.net>
- 4) [144318] Looking for WAP q's
by Paul Womble <pwomble1@tampabay.rr.com>
- 5) [144319] Four State QRP Group Wednesday Warble
by "David Bixler" <qrp@netins.net>
- 6) [144320] Re: *wow*...what a surprise
by "Mike Branca" <w3irz@att.net>
- 7) [144321] Re: Most Expensive Ham License :-)
by "Brian.Buydens@usask.ca" <buydens@duke.usask.ca>
- 8) [144322] Re: Gell Cell Questions
by "James R. Duffey" <JamesDuffey@comcast.net>
- 9) [144323] Putting a RockMite on 7.122 Mhz.
by "Joel M. Gilly" <jgilly2@ptd.net>
- 10) [144324] Re: Gel Cell Questions
by Tim Groat <tcgroat@earthlink.net>
- 11) [144325] Re: Gell Cell Questions
by Larry Cahoon <lejek@erols.com>
- 12) [144326] Re: Gell Cell Questions
by Michael Babineau <michael.babineau@sympatico.ca>
- 13) [144327] Truffle 01/09/2003
by "w5tb" <w5tb@arrl.net>
- 14) [144328] Re: Type 7 cores
by "Jim Kortge, K8IQY" <jokortge@prodigy.net>
- 15) [144329] Bands Condx explanation
by ARDUJENSKI@aol.com
- 16) [144330] Re: Bands Condx explanation
by "Karl F. Larsen" <k5di@zianet.com>
- 17) [144331] Unusual Wire - A Question
by "Dennis Payton" <dpayton@fwi.com>
- 18) [144332] OT: CAT5e cable
by "Karl F. Larsen" <k5di@zianet.com>
- 19) [144333] Re: Unusual Wire - A Question

- by "Mike Yetzsko" <myetsko@insydesw.com>
- 20) [144334] RE: Unusual Wire - A Question
by tf3vst@vortex.is (Villi Idunni)
- 21) [144335] Re: Gell Cell Questions
by "Lee Mairs" <lmairs@direcway.com>
- 22) [144336] Re: Unusual Wire - A Question
by "Frank Emens" <femens@hiwaay.net>
- 23) [144337] Re: Unusual Wire - A Question
by "Frank Emens" <femens@hiwaay.net>
- 24) [144338] Question and comment about 73 and 72
by jwatkins@birch.net
- 25) [144339] RE: Unusual Wire - A Possible Andwer
by Karl Kanalz <kkanalz@gcecispc.com>
- 26) [144340] FS: Norm's Items...check it out!!
by Lloyd Lachow <llachow@yahoo.com>
- 27) [144341] Re: Question and comment about 73 and 72
by "George, W5YR" <w5yr@att.net>
- 28) [144342] extra Sierra panel
by Dan Presley <talljazz@teleport.com>
- 29) [144343] Litz wire (was: Unusual wire)
by "N4LGH" <n4lgh@waveguide.us>
- 30) [144344] Fw: Question and comment about 73 and 72
by "KL7FDQ, Wayne Leman" <KL7FDQ@rangeweb.net>
- 31) [144345] Re: Question and comment about 73 and 72
by "KL7FDQ, Wayne Leman" <KL7FDQ@rangeweb.net>
- 32) [144346] Re: Litz wire (was: Unusual wire)
by "DTX" <dtx@wood.tzo.com>
- 33) [144347] Yaesu FT-817 QRP Multiband Rig for Sale
by "Jim Larsen, AL7FS" <JimLarsen2002@alaska.net>
- 34) [144348] Crossover distortion in Op-amps
by k4vib@att.net
- 35) [144349] RE: Question and comment about 73 and 72
by "Hare,Ed, W1RFI" <w1rfi@arrl.org>
- 36) [144350] FOX Tonight - N3BJ
by "Alan Fryer" <N3BJ@hotmail.com>
- 37) [144351] Simple 40M Class E transmitter
by Steven Weber <kd1jv@moose.ncia.net>
- 38) [144352] FS: Electrafit K1 Four band/ATU/NB/Stand
by "res075cz" <res075cz@gte.net>
- 39) [144353] Re: Gell Cell Questions
by James or Jade Seeber <kw3u@warwick.net>
- 40) [144354] An Annoying Off-Topic Problem
by "Chris Trask" <chrisrask@earthlink.net>
- 41) [144355] RE: An Annoying Off-Topic Problem
by Mark Schoonover <schoon@amgt.com>
- 42) [144356] OMNI VI+ sold
by "Doc K0EVZ" <dock0evz@earthlink.net>
- 43) [144357] OT: Looking for EchoLink test

- by "Bill Jones" <kd7s@psnw.com>
44) [144358] [CONTEST] N2CQ QRP Contest Calendar - Jan 9-31
by "Ken Newman" <N2CQ@Dandy.Net>
45) [144359] Re: Crossover distortion in Op-amps
by "Glen Leinweber" <leinwebe@mcmail.cis.mcmaster.ca>
46) [144360] Re: An Annoying Off-Topic Problem
by "Mike Yetsko" <myetsko@insydesw.com>

Date: Wed, 08 Jan 2003 19:14:18 -0500
From: Dave Gingrich K9DC <gingrich2@dcg.org>
To: qrp-l@lehigh.edu
Subject: [144315] FOX: K9DC 01/09/2003
Message-ID: <5.1.0.14.2.20030108190444.0198b168@127.0.0.1>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"; format=flowed

I will be hiding low tomorrow, hopefully between 7036 and 7037 listening up 1-2. As I send this message, I am in the San Francisco area and planning on spending all night on a plane JUST to get home to Indiana for this event.... assuming of course, I manage to stay awake for the duration.

I'll be running my K2, probably switching between my 80 meter horizontal loop and a 210 foot Inverted L, up 60 feet. This is my first Fox attempt, so be kind.

-Dave

=====
Dave Gingrich, K9DC - Indianapolis, Indiana USA
K2 #2211, K1 #931, QRP-L #2376, ARS #1109,
FPQRP #389, IRLP 4730/5730, k9dc.ampr.org
=====

Date: Wed, 08 Jan 2003 19:53:55 -0500
From: john <johnmb@nc.rr.com>
To: qrp-l@lehigh.edu
Cc: Bob <brownr@nc.rr.com>
Subject: [144316] *wow*...what a surprise
Message-ID: <3.0.3.32.20030108195355.0290cd7c@pop-server.nc.rr.com>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

I've been working on restoring a TenTec PM-something or other

that has been sitting around here for a number of years. Over the past couple days I've gotten it cleaned up and running (it was absolutely filthy with none of the slide switches functional and gunk covering every inch of the poor thing!). The previous owner had heaped numerous indignities on it, not the least of which was a hole in the front panel to mount a BNC connector (why do people DO these things?!) and generally letting it fall into serious disrepair.

After a few hours of cleaning and resoldering, I got it to play, and after a couple hours with wax and towels, I got it actually LOOKING like a radio again. I didn't have any manuals, so today after work I was messing with it into a dummy load, with a jumpered crystal socket and a cliplead key. After a few minutes into the 500 watt dummy load (I divide my time between QRP CW and high power tube type AM gear) I decided to pipe it into the 40m vertical down in the woods. After a short test blast of "vees" on the clear (except for AM BC heterodynes) freq of 7103 I called a test CQ just to see if I could make the wattmeter wiggle on the Heath SA2060 tuner (no!) and flicked the toggle back to RECEIVE.

Lo and behold, if it wasn't a station answering me! KF40NA isn't rare DX in Vonore TN from eastern NC, but it was quite a thrill to work him from my cliplead Tentec rising from the ashes, to his 100 watts to a mobile whip! We carried on for 15 minutes and had a nice chat, even with this mess of clip leads and crystals sprawled over the bench, and who knows how little RF coming out of this reconstituted Power Mite something or other....

One of the more fun QSOs I've had in a while! If I knew the steps to a happy dance, I'd be doing it! I've got a photo of this mess if anyone's curious... Fun stuff....

John wb5oau

Date: Wed, 08 Jan 2003 20:22:27 -0500
From: Paul Valko <w8kc@comcast.net>
To: Low Power Amateur Radio Discussion <qrp-l@Lehigh.EDU>
Subject: [144317] Please use "SPOT:" for your DX spots.
Message-ID: <002501c2b77d\$92791900\$6501a8c0@p4main>
MIME-version: 1.0
Content-type: text/plain; charset=iso-8859-1
Content-transfer-encoding: 7BIT

Would it be asking too much to have folks put the word "SPOT:" in front of DX spots?

For example... Spot: VK0DX on 14.061

73! =paul= W8KC

Collector of Ten*Tecs and Other Fine Plastics.
Visit the Virtual Ten*Tec Museum at <http://mywebpages.comcast.net/w8kc>

Date: Wed, 08 Jan 2003 20:27:47 -0500
From: Paul Womble <pwomble1@tampabay.rr.com>
To: QRP-L <qrp-l@Lehigh.EDU>, FP List <fpqrp-l@mpna.com>
Subject: [144318] Looking for WAP q's
Message-ID: <3E1CD013.505B11AF@tampabay.rr.com>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

I'll be on 7041.5 for the next hour or so calling CQ FP. Hope to chat with a few fellow Flying Pigs.

It's 0121z now.

73
Paul K4FB
FP#124

Date: Wed, 8 Jan 2003 19:44:17 -0600
From: "David Bixler" <qrp@netins.net>
To: "'Low Power Amateur Radio Discussion'" <qrp-l@lehigh.edu>
Subject: [144319] Four State QRP Group Wednesday Warble
Message-ID: <000101c2b780\$a3686560\$1b7298d1@XPComputer>
MIME-Version: 1.0
Content-Type: text/plain;
charset="us-ascii"
Content-Transfer-Encoding: quoted-printable

Hi gang: =20

Sorry for the late notice, but it's been "one of those days" at work this week.....

Anyway, at 9 PM Central time, the FSQRP group has our weekly Wednesday Warble on 3580.5 KHz PSK-31 mode. All QRP'ers within earshot are invited to drop in for an informal roundtable chat.

72, Dave

David Bixler W0CH
Seneca, Missouri
W0CH QRP Web Site: <http://w0ch.com>
Four State QRP Group: <http://w0ch.com/fsqrp>
Underdogs Fox Hunting Team: <http://w0ch.com/underdogs/underdogs.htm>

QRP: Little Radios, Big Fun!=20

Date: Wed, 8 Jan 2003 20:52:39 -0500
From: "Mike Branca" <w3irz@att.net>
To: <qrp-1@Lehigh.EDU>
Subject: [144320] Re: *wow*...what a surprise
Message-ID: <038c01c2b781\$cb7e2020\$c3f35b0c@default>
MIME-Version: 1.0
Content-Type: text/plain;
 charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

You asked the question "Why would someone do such a thing?"

Well the answer is really pretty simple and is the same one used for used autos. They were just getting it down to your price range.

Mike Branca W3IRZ in Conyers Georgia

Date: Wed, 08 Jan 2003 09:04:20 -0600 (CST)
From: "Brian.Buydens@usask.ca" <buydens@duke.usask.ca>
To: Low Power Amateur Radio Discussion <qrp-1@Lehigh.EDU>
Subject: [144321] Re: Most Expensive Ham License :-)
Message-ID: <Pine.OSF.4.44.0301080903330.520089-1000000@duke.usask.ca>
MIME-version: 1.0
Content-type: TEXT/PLAIN; charset=US-ASCII

Bad boys Bad boys
watcha gonna do?
watcha goona do when they call CQ?

Brian Buydens
Veterinary Electronic Data Specialist
Computing Services, University of Saskatchewan

email: Brian.Buydens@usask.ca
http://duke.usask.ca/~buydens
VE5RDV

I am a proud citizen of "Soviet Canuckistan"

Date: Wed, 08 Jan 2003 19:07:15 -0700
From: "James R. Duffey" <JamesDuffey@comcast.net>
To: qrp-1@lehigh.edu, michael.babineau@sympatico.ca, n5zgt@swcp.com
Subject: [144322] Re: Gell Cell Questions
Message-ID: <BA422762.22D57%JamesDuffey@comcast.net>
MIME-version: 1.0
Content-type: text/plain; charset=ISO-8859-1
Content-transfer-encoding: quoted-printable

Brian and Michael - Good questions on the gel cells.

Here are some general rules of thumb for gel cells. I say rules of thumb since every manufacturer is slightly different, but you probably won't go too wrong following these suggestions. Most battery manufacturers have web pages that give specific details. Check them out.

1. The Amp-Hour (AH) rating is usually based on a 20 hour current draw until the battery is completely discharged (about 10 V) at 77 F. For an 18 AH battery this would be 0.9 A for 20 hours. It is probably best not to fully discharge batteries as that can lead to cell reversal if the end point is not strictly adhered to. The discharge curve has a "knee" in it between 10.6V and 10.8V, where the time discharge curve becomes very steep (fast), so it is probably best to limit the discharge to 10.6 to 10.8 volts. At this point, about 90 % to 95 % of the battery's capacity has been used. So if we restrict the discharge of the battery to be on the safe side, then that 18AH battery really becomes a 16 to 17 AH battery.
2. If the discharge rate is greater than the 20 AH rate, then the capacity is also reduced. At the 10 hour rate it is reduced by about 10 % , at 5 hours by 20 % and at 2.5 hours by about 40 %. So, the lower the discharge

rate, the more capacity the battery has.

3. For Field Day, when the temperature is 77 F, you will get full rated capacity. At FYB0, when the temperature is 32 F, you will only get 85% of the 77 F capacity out of the same battery. For the 18 AH battery, this will be reduced to 15.3 AH. On the other hand at BUBBA, when the temperature is 104 F, you will get 105 % of the capacity, or 18.9 AH.

4. It is difficult to fully charge a lead acid cell using a constant voltage. Usually the battery is only about 85% charged. This reduces the capacity of the 18 AH battery to about 15.3 AH. Chargers that are designed specifically for gel cells do better. Chargers based on the Unitrode/TI 390=6

are very good and use a 3 step process. The chip is readily available; Digi-Key carries them, and the Handbook had a very good circuit using this chip for many years. It is missing from the most recent Handbooks. Ed?

So you see, that if you limit the discharge to 10.8 V, discharge at a 10 hour rate, use the battery at 32 F, and charge with a constant voltage, the capacity is decreased by a factor $(0.9) \times (0.9) \times (0.85) \times (0.85)$ or 0.58. So that

18 AH battery, under those conditions, is really a 10.5 AH battery!

Another rule of thumb is that the maximum current you can draw from Gel Cells is about equal to the AH rating, or about 18 Amps for that 18 AH battery. You can pull much higher currents for shorter times though, and it is left to the reader to envision how to build a spot welder from a gel cell. Don't place a wrench or screwdriver across the terminals or you may have to saw it off. Watch those rings.

Here is a quick way to calculate the battery size you need.

Determine the current draw of your rig in receive and transmit.

My OHR Classic draws about 100 mA in receive and about 1.2 A in transmit. CW is about a 40% duty cycle, that is the transmitter is on about 40% of the time in CW.

Suppose I want to operate a contest. I usually spend half the time transmitting and half time receiving.

Average current draw = 3D current draw when receiving + current draw when transmitter is keyed + current draw between transmitter characters

For my OHR;

Average Current Draw = 3D $(1/2)(100 \text{ mA}) + (1/2)(1200 \text{ mA})(0.4) +$

$(1/2)(100\text{mA}) \times (0.6) = 30\text{ mA} + 240\text{ mA} + 30\text{ mA} = 300\text{ mA}$

Now, for 10 hours of operating, I need $0.32\text{ A} \times 10\text{ hours} = 3.2\text{ AH}$ capacity.

Since this is only 10 hours, I need to multiply by 1.1 to get the equivalent
20 AH rate. This is now 3.42 AH.

But, since I only want to discharge the battery to 90%, I need to multiply
by 1.1 again so I am now up to 3.76 AH.

And, if I use a constant voltage charger to charge the battery, I need to
multiply by $1/0.85$ or 1.18 to get 5.2 AH.

If I am operating at 77 F I can stop there, if I am operating at a
significantly higher or lower temperature I need to adjust the capacity
accordingly.

You can adjust the calculations to suit your own needs.

I use a 7.5 AH battery for my OHR. I like lots of margin, an indication of
too much time spent on space components.:^) I use a solar panel to charge
the battery while I operate. The solar panel can supply 250 mA. I shunt the
battery with a 15 V Zener to prevent overcharging. The charger does not
fully replenish the battery, but it is good to extend the operating period
significantly. I have operated all day, half the night, and most of the next
day with this combination and had a battery level of 11.8 V when I headed
home.

You should also consider your rig's ability to operate at the low voltage,
say 10.8 V, required to extract the most power from your battery.

Gel Cells are good reliable rechargeable batteries that can provide 800 to
1000 charge-discharge cycles if properly cared for. I have used my 7.5 AH
battery for about 5 years now and it still has nearly full capacity.

This has been long, but I hope it is useful. - Dr. Megacycle KK6MC/5

--=20

James R. Duffey KK6MC/5
Cedar Crest, NM DM65

Date: Wed, 8 Jan 2003 21:20:39 -0500
From: "Joel M. Gilly" <jgilly2@ptd.net>

To: <qrp-1@Lehigh.EDU>
Subject: [144323] Putting a RockMite on 7.122 Mhz.
Message-ID: <000701c2b785\$b42f3040\$4a28bacc@brunhilda>
MIME-Version: 1.0
Content-Type: text/plain;
 charset="us-ascii"
Content-Transfer-Encoding: 7bit

Folks,

If I wanted to put a 40 Meter RockMite on 7.122 Mhz using one of the NorCal crystals, would the operation entail any wholesale changes to the circuit? Or is it just a matter of soldering the new crystal in place of the 7.040 Mhz crystal?

Thank you for your assistance.

Regards,
Joel M. Gilly
N3GXY

Date: Wed, 08 Jan 2003 20:08:07 -0700
From: Tim Groat <tcgroat@earthlink.net>
To: qrp-1@lehigh.edu
Subject: [144324] Re: Gel Cell Questions
Message-ID: <5.1.1.6.2.20030108182403.00a00ec0@mail.earthlink.net>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"; format=flowed

Gel-cell capacity often starts out slightly below the rating, typically 80% to 90% of rated A-Hrs. During the first few cycles, capacity increases to 100%, where it remains for most of the battery's useful life. As the battery nears wear-out, capacity begins to fall off. Common practice is to consider deterioration to 80% of rated capacity as the end of useful life. Wear-out accelerates greatly after that point.

The rated A-Hr capacity is specified for a fairly slow discharge, usually 1/20 the A-Hr capacity. Manufacturers refer to this as the "20-hour rate". Higher rate discharge means you get reduced A-Hr capacity before the voltage drops too low. The manufacturer's data-sheet often includes time vs. voltage graphs for various loads. Use these to determine how long you can go before the voltage reaches the lower limit for your rig under key-down conditions. The maximum safe load varies, but a 10 hour discharge rate is allowed for any battery I've seen. So your 18 A-Hr gel cell should

be OK for just about any QRP rig.

As a result of all this, the smallest size battery you should use is 125% of the ampere-hours you expect to use between charges, or ten times your average load current (whichever is bigger). But for longer battery life (meaning years before replacement), use at least 200% of the required A-Hrs. The battery will last far longer, both in years and number of cycles, if you don't let it go below half-charge. So unless weight and size are very important (such as for backpacking), go with a bigger battery.

All of this assumes proper care and treatment of the battery. This list describes the most common pitfalls, though it's by no means complete:

- (1) Recharge as soon as possible after using the battery. Not next week, not when you get around to it, but as soon as you get home.
- (2) Charge exactly per the manufacturer's recommendations. Undercharging causes sulfation and accelerated internal corrosion; overcharging causes irreversible loss of water and may open the pressure-relief vents. Beware of automotive type chargers: they often are incompatible with the strict requirements for charging gel-cells, and often have too much output current for small batteries.
- (3) If your charger is not temperature compensated per the manufacturer's requirements, charge the battery only at room temperature (20C - 25C). Even if it is temperature compensated, don't charge at extremely cold (<5C) or hot (>40C) temperatures.
- (4) While gel-cells don't usually emit hydrogen gas during recharge, it can happen if the charger malfunctions or if a cell shorts out. Provide adequate ventilation when charging, in case something goes wrong.
- (5) Between uses, recharge the battery at least every six months to make up for self-discharge. Make that two to three months in hot climates.
- (6) Never try to "condition" a gel-cell by discharging it all the way and then recharging it. All this does is reduce the life of the battery. Gel-cells have no memory effect, so recharging after a partial discharge is harmless.
- (7) Keep the battery in a cool place, but keep it from freezing. If the battery freezes, the plates can buckle causing permanent damage. The battery can survive temperatures far below zero if it is fully charged, but freezes easily when discharged. You also lose capacity when using the battery at cold temperatures, but the battery will recover from this as long as it isn't allowed to freeze. At the other extreme, the battery wear-out rate roughly doubles for every 10C increase above room temperature. A battery good for five years at 25C will die in less than two

years at 40C.

(8) Protect against short circuits. Always use a fuse as close to the battery terminals as possible. Use insulators or guards to protect the terminals. A sturdy plastic battery box is a good idea, as long as it provides ventilation.

(9) When the battery dies, recycle it (trade it in where you buy the replacement). They contain lead and sulfuric acid, so it's both unsafe and illegal to discard them in your household trash can.

Have fun, but be safe!

--72--

Tim (KROU)

>Michael Babineau <michael.babineau@sympatico.ca>:

>

>What percentage of usable capacity can I count on from a new gel cell?

>(ie if I have a 18Ah cell how much of this capacity can I count on

>using before having to recharge the cell?) I'm assuming that this

>number is somewhat less than 100% therefore my usable capacity is

>somewhat less than 18Ah.

>

>Also, Is there a rule of thumb with regards to the maximum current for a

>given gel cell capacity?

Date: Thu, 09 Jan 2003 03:28:57 +0000

From: Larry Cahoon <lejek@erols.com>

To: "Low Power Amateur Radio Discussion" <qrp-l@lehigh.edu>

Subject: [144325] Re: Gell Cell Questions

Message-ID: <5.1.0.14.0.20030109032054.02bc6e40@pop.erols.com>

Mime-Version: 1.0

Content-Type: text/plain; charset="us-ascii"; format=flowed

Brian,

Here is a good source on batteries in general put together by the people who sell some of the solar power systems. It is well worth carefully reading the whole thing.

http://www.windsun.com/Batteries/Battery_FAQ.htm

As for how far to discharge the battery, there is a table about two thirds

of the way through that give the details. In a nutshell they do not like you getting much below the 40% level - which is at about 11.75 volts. That is actually measure after the battery has been left to rest for a few hours after use. So if you monitor it as you use it you can go a bit lower. How low will depend how much current you are drawing from the battery for your use.

73 de Larry.....WD3P in MD
<http://www.wd3p.net/>

Date: Wed, 8 Jan 2003 23:02:34 -0500
From: Michael Babineau <michael.babineau@sympatico.ca>
To: "James R. Duffey" <JamesDuffey@comcast.net>
Cc: qrp-1@Lehigh.EDU
Subject: [144326] Re: Gell Cell Questions
Message-ID: <2EF473CC-2387-11D7-9AA9-00039309268A@sympatico.ca>
Content-Type: text/plain; charset=ISO-8859-1; format=flowed
Mime-Version: 1.0 (Apple Message framework v551)
Content-Transfer-Encoding: quoted-printable

Dr. Megacycle you have made my day!
This is exactly what I am looking for but wasn't able to find elsewhere.

Thanks again. I will print this and keep it for future reference.

Michael VE3WMB

On Wednesday, January 8, 2003, at 09:07 PM, James R. Duffey wrote:

> Brian and Michael - Good questions on the gel cells.
>
> Here are some general rules of thumb for gel cells. I say rules of=20
> thumb
> since every manufacturer is slightly different, but you probably won't=20=

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> 1. The Amp-Hour (AH) rating is usually based on a 20 hour current draw=20=

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 > the battery is completely discharged (about 10 V) at 77 F. For an 18 =
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 > 2. If the discharge rate is greater than the 20 AH rate, then the=20
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 > will
 > be reduced to 15.3 AH. On the other hand at BUBBA, when the=20
 > temperature is
 > 104 F, you will get 105 % of the capacity, or 18.9 AH.
 >
 > 4. It is difficult to fully charge a lead acid cell using a constant
 > voltage. Usually the battery is only about 85% charged. This reduces=20=

 > the
 > capacity of the 18 AH battery to about 15.3 AH. Chargers that are=20=

> designed
 > specifically for gel cells do better. Chargers based on the=20
 > Unitrode/TI 3906
 > are very good and use a 3 step process. The chip is readily available;
 > Digi-Key carries them, and the Handbook had a very good circuit using=20=

> this
 > chip for many years. It is missing from the most recent Handbooks. Ed?
 >
 > So you see, that if you limit the discharge to 10.8 V, discharge at a=20=

> 10
 > hour rate, use the battery at 32 F, and charge with a constant=20
 > voltage, the
 > capacity is decreased by a factor $(0.9) \times (0.9) \times (0.85) \times (0.85)$ or 0.58.=20=

> So that
 > 18 AH battery, under those conditions, is really a 10.5 AH battery!
 >
 > Another rule of thumb is that the maximum current you can draw from =
 Gel
 > Cells is about equal to the AH rating, or about 18 Amps for that 18 AH
 > battery. You can pull much higher currents for shorter times though,=20=

> and it
 > is left to the reader to envision how to build a spot welder from a =
 gel
 > cell. Don't place a wrench or screwdriver across the terminals or you=20=

> may
 > have to saw it off. Watch those rings.
 >
 > Here is a quick way to calculate the battery size you need.
 >
 > Determine the current draw of your rig in receive and transmit.
 >
 > My OHR Classic draws about 100 mA in receive and about 1.2 A in=20
 > transmit. CW
 > is about a 40% duty cycle, that is the transmitter is on about 40% of=20=

> the
 > time in CW.
 >
 > Suppose I want to operate a contest. I usually spend half the time
 > transmitting and half time receiving.
 >
 > Average current draw =3D current draw when receiving + current draw =
 when

> transmitter is keyed + current draw between transmitter characters
 >
 > For my OHR;
 >
 > Average Current Draw = $\frac{1}{2}(100 \text{ mA}) + \frac{1}{2}(1200 \text{ mA})(0.4) +$
 > $\frac{1}{2}(100 \text{ mA})(0.6) = 50 \text{ mA} + 240 \text{ mA} + 30 \text{ mA} = 320 \text{ mA}$
 >
 > Now, for 10 hours of operating, I need $0.32 \text{ A} \times 10 \text{ hours} = 3.2 \text{ AH}$
 > capacity.
 >
 > Since this is only 10 hours, I need to multiply by 1.1 to get the
 > equivalent
 > 20 AH rate. This is now 3.42 AH.
 >
 > But, since I only want to discharge the battery to 90%, I need to
 > multiply
 > by 1.1 again so I am now up to 3.76 AH.
 >
 > And, if I use a constant voltage charger to charge the battery, I need
 > to
 > multiply by $1/0.85$ or 1.18 to get 5.2 AH.
 >
 > If I am operating at 77 F I can stop there, if I am operating at a
 > significantly higher or lower temperature I need to adjust the
 > capacity
 > accordingly.
 >
 > You can adjust the calculations to suit your own needs.
 >
 > I use a 7.5 AH battery for my OHR. I like lots of margin, an
 > indication of
 > too much time spent on space components.:^) I use a solar panel to
 > charge
 > the battery while I operate. The solar panel can supply 250 mA. I
 > shunt the
 > battery with a 15 V Zener to prevent overcharging. The charger does
 > not
 > fully replenish the battery, but it is good to extend the operating
 > period
 > significantly. I have operated all day, half the night, and most of
 > the next
 > day with this combination and had a battery level of 11.8 V when I
 > headed
 > home.
 >
 > You should also consider your rig's ability to operate at the low
 > voltage,

> say 10.8 V, required to extract the most power from your battery.
>
> Gel Cells are good reliable rechargeable batteries that can provide=20
> 800 to
> 1000 charge-discharge cycles if properly cared for. I have used my 7.5=20=

> AH
> battery for about 5 years now and it still has nearly full capacity.
>
> This has been long, but I hope it is useful. - Dr. Megacycle KK6MC/5
>
> --=20
> James R. Duffey KK6MC/5
> Cedar Crest, NM DM65
>

Date: Wed, 8 Jan 2003 22:03:57 -0600
From: "w5tb" <w5tb@arrl.net>
To: "Low Power Amateur Radio Discussion" <qrp-l@lehigh.edu>
Subject: [144327] Truffle 01/09/2003
Message-ID: <001901c2b794\$22acfbcb0\$0400a8c0@altn1.tx.home.com>
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: quoted-printable

Hi Gang! I have the honors tomorrow night. Look for me just above 040 =
listening up at 0130. I'll send ur call rst TX Doc es my FP# for those =
going for the Flying Pigs 2003 challenge =
<http://www.fpqrp.com/wap-2003.html>

72, 73, oo T.E. 'Doc' Drake, W5TB
Arlington, Texas
FISTS # 5365 QRPARCI # 3532 ARRL Life Member K1 #181 K2#1617

Date: Wed, 08 Jan 2003 23:04:31 -0500
From: "Jim Kortge, K8IQY" <jokortge@prodigy.net>
To: KD5NWA@cbayona.com
Cc: qrp-l@lehigh.edu
Subject: [144328] Re: Type 7 cores
Message-ID: <5.2.0.9.1.20030108230219.00b0dd60@pop.prodigy.yahoo.com>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"; format=flowed

At 02:12 PM 1/8/2003 -0600, you wrote:

>I have noticed that almost all projects for HF use type 2 (Red) or type 6
>(Yellow) cores, but type 7 (white) which has a 3MHz to 35Mhz range and is
>more stable than the types 2 or 6 and is very similar in Q factor is
>almost never used.

>My question is am I missing something here? Why don't they use type 7 in
>oscillators or any place where you need good stability?

>

>Cecil

>KD5NWA

We (they) do all of the time Cecil. The T50-7 core is the defacto standard for all of the VFO circuits that I and others design and build. That core is specifically used because of its low tempco compared to red or yellow cores.

72,

Jim, K8IQY

Date: Wed, 8 Jan 2003 23:26:17 EST
From: ARDUJENSKI@aol.com
To: qrp-l@lehigh.edu
Subject: [144329] Bands Condx explanation
Message-ID: <ba.3442ee3d.2b4e53e9@aol.com>
MIME-Version: 1.0
Content-Type: text/plain; charset="US-ASCII"
Content-Transfer-Encoding: 7bit

The band numbers in the past few days are pretty normal and the numbers are SFI-174 A-Index 6 K-Index 1 today with no storms. Looking at the charts for NVIS 80M SHOULD BE VERY GOOD BELOW 4MHz but as a matter of fact has been pretty poor. I am not sure if it has to do with the decline of the solar cycle or some other disturbances in the ionosphere. I am just not sure of what is causing the loss of early evening propagation and erratic daytime openings. Is this normal on the down side? Propagation numbers don't appear to be predicting accurately the actual conditions

Alan KB7MBI
Woodinville, WA

Date: Wed, 8 Jan 2003 22:16:22 -0700 (MST)
From: "Karl F. Larsen" <k5di@zianet.com>
To: ARDUJENSKI@aol.com
Cc: Low Power Amateur Radio Discussion <qrp-1@Lehigh.EDU>
Subject: [144330] Re: Bands Condx explanation
Message-ID: <Pine.LNX.4.44.0301082208560.2594-100000@bucket.dog>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

Hi Alan, part of the problem is that the Flux is very high making the Maximum Usable Frequency quite high, like above 10 meters! Also the A index is 6 which is a bit high for good short range contacts.

I am a member of the NM Breakfast Club and we get on before daybreak and the short skip is very poor but the long range QRM gets in fine! As day breaks the long range stuff gets weaker and the 2-500 mile signals begin to reach normal. It's almost daily now that we get mobiles from Seattle checking in early in the net. And another near Chicago. So adversity is fun.

On Wed, 8 Jan 2003 ARDUJENSKI@aol.com wrote:

> The band numbers in the past few days are pretty normal and the numbers are
> SFI-174 A-Index 6 K-Index 1 today with no storms. Looking at the charts for
> NVIS 80M SHOULD BE VERY GOOD BELOW 4MHz but as a matter of fact has been
> pretty poor. I am not sure if it has to do with the decline of the solar
> cycle or some other disturbances in the ionosphere. I am just not sure of
> what is causing the loss of early evening propagation and irratic daytime
> openings. Is this normal on the down side? Propagation numbers don't appear
> to be predicting accurately the actual conditions

>
> Alan KB7MBI
> Woodinville, WA

>
>
>
>
>
>
>
>

>

--

- Karl Larsen k5di Las Cruces, NM Az ScQRPions -

Date: Thu, 9 Jan 2003 07:53:06 -0500
From: "Dennis Payton" <dpayton@fwi.com>
To: <qrp-1@Lehigh.EDU>
Subject: [144331] Unusual Wire - A Question
Message-ID: <006201c2b7de\$0ed1ac00\$ada854d1@6300us>
MIME-Version: 1.0
Content-Type: text/plain;
 charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

I just acquired a roll of what I guess you would call wire, that is made in a manner I've never seen before. (Maybe I'm just Sheltered!) It's slightly larger in diameter than dental floss and consists of seven strands of something like dental floss that are each spiral wound with a flat ribbon (foil) of metal. I can't discern what the metal is, but it's solderable, bendable, and pretty strong. A friend told me he thinks the wire is for applications where it's going to be constantly flexed, which makes sense to me, but does anybody know for sure what this stuff is?

I'm thinking it could be the ultimate invisible or portable antenna wire for me since it won't break from flexing, it's very strong, and it's very light. One thing I'm worried about though, is its RF carrying ability. I know antenna wire can be pretty thin but should I be concerned? Would rolling out a length and measuring it with an ohmmeter tell me everything I need to know? If that would work, how much resistance would say I'm beginning to hurt my efficiency? Maybe I could double or triple it and twist it together with a drill. Also I'm wondering if it will absorb water, but if that would be a problem, I could probably just give it a good soaking with silicone.

Thanks,

Denny Payton, N9JXY
Auburn, IN

Date: Thu, 9 Jan 2003 06:36:52 -0700 (MST)

From: "Karl F. Larsen" <k5di@zianet.com>
To: qrp-l@lehigh.edu
Subject: [144332] OT: CAT5e cable
Message-ID: <Pine.LNX.4.44.0301090625490.1229-100000@bucket.dog>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

Next week I will change Internet providers to MSN and get in return a high speed internet service. I needed to set up a Local Area Network so that 3 computers can have the internet at the same time.

My wife's computer is 120 feet from this one and I needed to connect both with "network (ethernet)" cards that are wired together with a special cable. The data flows between the computers at 100 Mbytes/second and uses this special 4 pair CAT5e wire.

I had seen this wire and have a couple of short jumpers. But where do you get 120 feet of the stuff? Turns out you go to Home Depot and they have 5 or six kinds. I got a kind that can be indoor/outdoor since part of the run is exposed to outdoors.

It works great!

--

- Karl Larsen k5di Las Cruces,NM Az ScQRPions -

Date: Thu, 9 Jan 2003 08:59:26 -0500
From: "Mike Yetzko" <myetzko@insydesw.com>
To: <dpayton@fwi.com>,
"Low Power Amateur Radio Discussion" <qrp-l@lehigh.edu>
Subject: [144333] Re: Unusual Wire - A Question
Message-ID: <002b01c2b7e7\$643f65c0\$0300a8c0@charter.net>
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

> I just acquired a roll of what I guess you would call wire, that is made in
> a manner I've never seen before. (Maybe I'm just Sheltered!) It's slightly
> larger in diameter than dental floss and consists of seven strands of
> something like dental floss that are each spiral wound with a flat

ribbon

> (foil) of metal. I can't discern what the metal is, but it's solderable,
> bendable, and pretty strong. A friend told me he thinks the wire is for
> applications where it's going to be constantly flexed, which makes sense
to
> me, but does anybody know for sure what this stuff is?

I've seen that wire before in applications for extreme flexibility. Great
stuff, but VERY fragile. If you solder to it it will almost certainly
break
if you allow any flexing near the solder joint. The connectors I've seen
for the stuff all crimp, and then have 'tubes' or other restraints so that
it won't flex near the crimp.

By the way, it's EXTREMELY low power. At least the stuff I've
seen.

It's a compromise. A BIG compromise. Unless a major criteria for you
is flexibility.

Mike

Date: Thu, 9 Jan 2003 14:17:08 -0000
From: tf3vst@vortex.is (Villi Idunni)
To: "Low Power Amateur Radio Discussion" <qrp-1@Lehigh.EDU>
Subject: [144334] RE: Unusual Wire - A Question
Message-ID: <LMEFJBBFINEDEOKDIPCPIEENCHAA.tf3vst@vortex.is>
MIME-Version: 1.0
Content-Type: text/plain;
 charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

No, not for shure, but it reminds me of the line that is used in electric
fences for animals (vy high voltage/vy low ampers pulses).

72, de Villi TF3VS

> me, but does anybody know for sure what this stuff is?
>
>

Date: Thu, 9 Jan 2003 09:33:56 -0500
From: "Lee Mairs" <lairs@direcway.com>
To: "Low Power Amateur Radio Discussion" <qrp-l@Lehigh.EDU>
Subject: [144335] Re: Gell Cell Questions
Message-ID: <002201c2b7ec\$24794f50\$2202a8c0@J4>
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

For flooded batteries limit the discharge to 50% of capacity. This will greatly extend the battery life. I've gotten thousands of cycles out of 220 AH 6 volt golf cart batteries (Trojan T105s available in the spring when all the golf courses replace there batteries for around \$65 each) series/paralleled into a 12 volt 1100 AH bank charged by 4 70 watt solar panels.

For the price, you just can't beat golf cart batteries. Gel cells get about half as many cycles in their life; but, they sure are preferred if there is a possibility of any upside down action!
73 de Lee
KM4YY

----- Original Message -----

From: "James R. Duffey" <JamesDuffey@comcast.net>
To: "Low Power Amateur Radio Discussion" <qrp-l@Lehigh.EDU>
Sent: Wednesday, January 08, 2003 9:07 PM
Subject: Re: Gell Cell Questions

Brian and Michael - Good questions on the gel cells.

Here are some general rules of thumb for gel cells. I say rules of thumb since every manufacturer is slightly different, but you probably won't go too wrong following these suggestions. Most battery manufacturers have web pages that give specific details. Check them out.

1. The Amp-Hour (AH) rating is usually based on a 20 hour current draw until the battery is completely discharged (about 10 V) at 77 F. For an 18 AH battery this would be 0.9 A for 20 hours. It is probably best not to fully discharge batteries as that can lead to cell reversal if the end point is not strictly adhered to. The discharge curve has a "knee" in it between 10.6 V and 10.8V, where the time discharge curve becomes very steep (fast), so it is probably best to limit the discharge to 10.6 to 10.8 volts. At this point, about 90 % to 95 % of the battery's capacity has been used. So if we restrict the discharge of the battery to be on the safe side, then that 18 AH battery really becomes a 16 to 17 AH battery.

2. If the discharge rate is greater than the 20 AH rate, then the capacity is also reduced. At the 10 hour rate it is reduced by about 10 % , at 5 hours by 20 % and at 2.5 hours by about 40 %. So, the lower the discharge rate, the more capacity the battery has.

3. For Field Day, when the temperature is 77 F, you will get full rated capacity. At FYBO, when the temperature is 32 F, you will only get 85% of the 77 F capacity out of the same battery. For the 18 AH battery, this will be reduced to 15.3 AH. On the other hand at BUBBA, when the temperature is 104 F, you will get 105 % of the capacity, or 18.9 AH.

4. It is difficult to fully charge a lead acid cell using a constant voltage. Usually the battery is only about 85% charged. This reduces the capacity of the 18 AH battery to about 15.3 AH. Chargers that are designed specifically for gel cells do better. Chargers based on the Unitrode/TI 3906 are very good and use a 3 step process. The chip is readily available; Digi-Key carries them, and the Handbook had a very good circuit using this chip for many years. It is missing from the most recent Handbooks. Ed?

So you see, that if you limit the discharge to 10.8 V, discharge at a 10 hour rate, use the battery at 32 F, and charge with a constant voltage, the capacity is decreased by a factor $(0.9) \times (0.9) \times (0.85) \times (0.85)$ or 0.58. So that 18 AH battery, under those conditions, is really a 10.5 AH battery!

Another rule of thumb is that the maximum current you can draw from Gel Cells is about equal to the AH rating, or about 18 Amps for that 18 AH battery. You can pull much higher currents for shorter times though, and it is left to the reader to envision how to build a spot welder from a gel cell. Don't place a wrench or screwdriver across the terminals or you may have to saw it off. Watch those rings.

Here is a quick way to calculate the battery size you need.

Determine the current draw of your rig in receive and transmit.

My OHR Classic draws about 100 mA in receive and about 1.2 A in transmit. CW is about a 40% duty cycle, that is the transmitter is on about 40% of the time in CW.

Suppose I want to operate a contest. I usually spend half the time transmitting and half time receiving.

Average current draw = current draw when receiving + current draw when transmitter is keyed + current draw between transmitter characters

For my OHR;

Average Current Draw = $(1/2)(100 \text{ mA}) + (1/2)(1200 \text{ mA})(0.4) + (1/2)(100 \text{ mA})(0.6) = 50 \text{ mA} + 240 \text{ mA} + 30 \text{ mA} = 320 \text{ mA}$

Now, for 10 hours of operating, I need $0.32 \text{ A} \times 10 \text{ hours} = 3.2 \text{ AH}$ capacity.

Since this is only 10 hours, I need to multiply by 1.1 to get the equivalent 20 AH rate. This is now 3.42 AH.

But, since I only want to discharge the battery to 90%, I need to multiply by 1.1 again so I am now up to 3.76 AH.

And, if I use a constant voltage charger to charge the battery, I need to multiply by $1/0.85$ or 1.18 to get 5.2 AH.

If I am operating at 77 F I can stop there, if I am operating at a significantly higher or lower temperature I need to adjust the capacity accordingly.

You can adjust the calculations to suit your own needs.

I use a 7.5 AH battery for my OHR. I like lots of margin, an indication of too much time spent on space components.:^) I use a solar panel to charge the battery while I operate. The solar panel can supply 250 mA. I shunt the battery with a 15 V Zener to prevent overcharging. The charger does not fully replenish the battery, but it is good to extend the operating period significantly. I have operated all day, half the night, and most of the next day with this combination and had a battery level of 11.8 V when I headed home.

You should also consider your rig's ability to operate at the low voltage, say 10.8 V, required to extract the most power from your battery.

Gel Cells are good reliable rechargeable batteries that can provide 800 to 1000 charge-discharge cycles if properly cared for. I have used my 7.5 AH battery for about 5 years now and it still has nearly full capacity.

This has been long, but I hope it is useful. - Dr. Megacycle KK6MC/5

--

James R. Duffey KK6MC/5
Cedar Crest, NM DM65

Date: Thu, 09 Jan 2003 08:43:46 -0600
From: "Frank Emens" <femens@hiwaay.net>

To: myetsko@insydesw.com
Cc: qrp-1@lehigh.edu
Subject: [144336] Re: Unusual Wire - A Question
Message-ID: <3E1D3642.9987.E7737@localhost>
MIME-Version: 1.0
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7BIT
Content-description: Mail message body

sounds like you're describing "Litz" wire. Much valued for winding coils, etc. in past years.

Date: Thu, 09 Jan 2003 08:46:40 -0600
From: "Frank Emens" <femens@hiwaay.net>
To: myetsko@insydesw.com
Cc: qrp-1@lehigh.edu
Subject: [144337] Re: Unusual Wire - A Question
Message-ID: <3E1D36F0.3744.111E33@localhost>
MIME-Version: 1.0
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7BIT
Content-description: Mail message body

Sorry about that, Mike. I didn't notice that you were quoting the question. didn't see it first time around. It also sounds a lot like the stuff Philmore headphone leads were made of, except they were protected by a woven fabric shell.

Date: Thu, 9 Jan 2003 09:45:05 -0600
From: jwatkins@birch.net
To: qrp-1@Lehigh.EDU
Subject: [144338] Question and comment about 73 and 72
Message-ID: <1042127105.3e1d990144137@webmail.birch.net>
MIME-Version: 1.0
Content-Type: text/plain; charset=iso-8859-1
Content-Transfer-Encoding: 8bit

All,

I don't know the history behind signing with 72 when running QRP, but suppose

it is our way of indicating we use less power as we play ham radio.

Here is my comment then. If one uses a 3:1 dash to dot ratio when transmitting cw then sending a 72's rather than 73's would take an additional 11 percent more energy from your power supply or batteries.

Would it be better to send 75's as that would use 22 percent less energy?

Well, unless 75's already means something terrible?

Have a great day and enjoy the hobby!

72's (since I am not transmitting at this time) John N0EVH

Date: Thu, 9 Jan 2003 10:18:02 -0600
From: Karl Kanalz <kkanalz@gcecis.com>
To: "'dpayton@fwi.com'" <dpayton@fwi.com>,
Low Power Amateur Radio Discussion <qrp-l@Lehigh.EDU>
Subject: [144339] RE: Unusual Wire - A Possible Answer
Message-ID: <01C2B7C8.6DE595A0@KKANALZ>

It sounds to me, Dennis, that you have a roll of "Litz" wire! It's really nifty for winding coils and making loop antennas for low frequency work, but can be used for HF purposes as well.

You'll often find "Litz" wire used in the earphone cords of old-fashioned headphones.

Try a "Google" search on the Internet for more info on Litz wire.

Karl K - W8TIF
McKinney, Texas

-----Original Message-----
From: Dennis Payton [SMTP:dpayton@fwi.com]
Sent: Thursday, January 09, 2003 6:53 AM
To: Low Power Amateur Radio Discussion
Subject: Unusual Wire - A Question

I just acquired a roll of what I guess you would call wire, that is made in a manner I've never seen before. (Maybe I'm just Sheltered!) It's slightly larger in diameter than dental floss and consists of seven strands of something like dental floss that are each spiral wound with a flat ribbon

(foil) of metal. I can't discern what the metal is, but it's solderable, bendable, and pretty strong. A friend told me he thinks the wire is for applications where it's going to be constantly flexed, which makes sense to me, but does anybody know for sure what this stuff is?

I'm thinking it could be the ultimate invisible or portable antenna wire for me since it won't break from flexing, it's very strong, and it's very light.

One thing I'm worried about though, is its RF carrying ability. I know antenna wire can be pretty thin but should I be concerned? Would rolling out a length and measuring it with an ohmmeter tell me everything I need to know? If that would work, how much resistance would say I'm beginning to hurt my efficiency? Maybe I could double or triple it and twist it together with a drill. Also I'm wondering if it will absorb water, but if that would be a problem, I could probably just give it a good soaking with silicone.

Thanks,

Denny Payton, N9JXY
Auburn, IN

Date: Thu, 9 Jan 2003 08:43:33 -0800 (PST)
From: Lloyd Lachow <llachow@yahoo.com>
To: a low-energy group <qrp-l@lehigh.edu>
Cc: k9nk@aol.com
Subject: [144340] FS: Norm's Items...check it out!!
Message-ID: <20030109164333.46446.qmail@web41005.mail.yahoo.com>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii

Norm's not able to post to the list right now, so here are some items for your perusal...reply e-mail adr at end - ljl

FOR SALE

ZM-2 Tuner - Excellent --- \$50.00 plus shipping

Radio Shack Digital SWR Meter - Excellent --- \$50.00

plus shipping

EZ Hang Wire Launcher - Brand New --\$ 50.00 -- plus shipping

Bencher BY-1 Black Paddle with custom plastic dust cover -- Excellent - \$50.00 - plus shipping

MFJ 107B - Mini LCD 24 hour clock - Excellent -- \$5 -- plus shipping

Please inquire to k9nk@aol.com

Do you Yahoo!?

Yahoo! Mail Plus - Powerful. Affordable. Sign up now.
<http://mailplus.yahoo.com>

Date: Thu, 9 Jan 2003 11:03:38 -0600
From: "George, W5YR" <w5yr@att.net>
To: <jwatkins@birch.net>,
"Low Power Amateur Radio Discussion" <qrp-l@Lehigh.EDU>
Subject: [144341] Re: Question and comment about 73 and 72
Message-ID: <005f01c2b801\$0e687500\$0201a8c0@fairviewtx.net>
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

True QRPers resolved this issue long ago by reducing the sign to its very minimum

"dit dit"

73/72, George
Amateur Radio W5YR - the Yellow Rose of Texas
In the 57th year and it just keeps getting better!
Fairview, TX 30 mi NE of Dallas in Collin county EM13qe
K2 #489 IC-765 #2349 IC-756 PRO #2121 IC-756 PRO2 #3235

----- Original Message -----

From: <jwatkins@birch.net>
To: "Low Power Amateur Radio Discussion" <qrp-l@Lehigh.EDU>
Sent: Thursday, January 09, 2003 9:45 AM
Subject: Question and comment about 73 and 72

>
> Would it be better to send 75's as that would use 22 percent less
energy?

Date: Wed, 8 Jan 2003 23:02:06 -0800
From: Dan Presley <talljazz@teleport.com>
To: qrp-l@lehigh.edu
Subject: [144342] extra Sierra panel
Message-ID: <p0501042aba42ce6dac6f@[216.26.3.177]>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii" ; format="flowed"

While cleaning up I came across an extra front panel for a Sierra (pre KC2), so if you have need of one. let me know. I need a small pot for a rockmite volume control, so happy to trade for whatever you've got lying around.

--
Dan Presley-N7CQR-Portland, Or QRP-L #502
n7cqr@arrl.net

Date: Thu, 9 Jan 2003 09:54:18 -0800
From: "N4LGH" <n4lgh@waveguide.us>
To: "QRP-L" <qrp-l@lehigh.edu>
Subject: [144343] Litz wire (was: Unusual wire)
Message-ID: <GNEOLGDJDJOPEALHJMKLCIECMDFAA.n4lgh@waveguide.us>
MIME-Version: 1.0
Content-Type: text/plain;
 charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

I have no clue what the wire described is called, but it is definitely not litz wire.

But I think Litz wire deserves more attention in the QRP field as we are into efficiency (right?)

Litz wire is designed to maximize surface area and increase Q in various applications. It is getting more and more attention in the power conversion industry, and has long been used by Amateurs and RF engineers to improve Q in inductors.

There's a lot of confusion when it comes to litz. It's available in many configurations, from number of strands, individually insulated or not, 'served' with an over coating of various materials (or not), and various amounts of 'twist' and configurations thereof.

There is some really good tech info in Litz wire from the wire manufacturers and educational facilities -

<http://www.mwswire.com/litzmain.htm>

<http://www.litz-wire.com/technical.html>

This one gets into cost optimization

<http://thayer.dartmouth.edu/other/inductor/cooscost.pdf>

There are hundreds more if you google creatively with litz wire as one of your search criteria.

I've goofed around with litz and it will definitely give you different results over solid magnet wire. I couldn't find a chart comparing various litz configurations to the OD of standard AWG sizes, but I've found that as a rule of thumb if you use a configuration that is about the same OD as the wire called for in an inductor spec you'll get higher Q with the Litz. (the math is very intimidating to calculate the optimum size ...)

Litz can be expensive, as most manufacturers don't 'stock' it. They make it to order because each application usually requires a special configuration. (I love engineers, don't you?)

Several of the suppliers many of us use stock a few litz wire configurations. CWS ByteMark carries 3 configurations. I think the Wireman carries some litz, and Surplus Sales of Nebraska has some available. I *think* SkyCraft in FL has some as well.

I'd like to see the kits and projects we use / support include litz wire. And for those that already do, I think it would be enlightening for the designers to discuss with us why / how they came up with the configurations they settled upon.

This could be a very educational thread.

Lovin 'dat Litz
Tracy N4LGH

Date: Thu, 9 Jan 2003 11:10:28 -0700

From: "KL7FDQ, Wayne Leman" <KL7FDQ@rangeweb.net>
To: <qrp-1@lehigh.edu>
Subject: [144344] Fw: Question and comment about 73 and 72
Message-ID: <002e01c2b80a\$71932e50\$023d1dac@waynecomputer>
MIME-Version: 1.0
Content-Type: text/plain;
 charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

QRO ops use it also. It's an old salutation from American Morse Code.
Wayne

Wayne Leman
<http://www.qsl.net/kl7fdq>

> True QRPers resolved this issue long ago by reducing the sign to its
> very minimum
>
> "dit dit"
>
> 73/72, George

Date: Thu, 9 Jan 2003 11:31:28 -0700
From: "KL7FDQ, Wayne Leman" <KL7FDQ@rangeweb.net>
To: "Low Power Amateur Radio Discussion" <qrp-1@lehigh.edu>
Subject: [144345] Re: Question and comment about 73 and 72
Message-ID: <006001c2b80d\$624a3030\$023d1dac@waynecomputer>
MIME-Version: 1.0
Content-Type: text/plain;
 charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Whoops, not salutation, but, rather, leave-taking.
Wayne
KL7FDQ

> QRO ops use it also. It's an old salutation from American Morse Code.
> Wayne
> -----
> Wayne Leman
> <http://www.qsl.net/kl7fdq>
>
> > True QRPers resolved this issue long ago by reducing the sign to its
> > very minimum

> >
> > "dit dit"
> >
> > 73/72, George

Date: Thu, 9 Jan 2003 10:51:57 -0800
From: "DTX" <dtx@wood.tzo.com>
To: <qrp-1@lehigh.edu>
Subject: [144346] Re: Litz wire (was: Unusual wire)
Message-ID: <005701c2b810\$2fd0dd40\$0c00a8c0@home>
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

They may choose to call it whatever they like, but if it is not individually insulated, all you gain is the flexibility. Which, if you have ever worked with that 1/4 inch square copper stock in a 500 amp 32 volt power supply, can be very worthwhile. Even without any increased efficiency.

Gary WA6DTX

----- Original Message -----
From: "N4LGH" <n4lgh@waveguide.us>
To: "Low Power Amateur Radio Discussion" <qrp-1@Lehigh.EDU>
Sent: Thursday, January 09, 2003 9:54 AM
Subject: Litz wire (was: Unusual wire)

[snip]
> There's a lot of confusion when it comes to litz. It's available in many
> configurations, from number of strands, individually insulated or not,
> 'served' with an over coating of various materials (or not), and various
> amounts of 'twist' and configurations thereof.
[snip]

> Tracy N4LGH

Date: Thu, 09 Jan 2003 09:56:09 -0900
From: "Jim Larsen, AL7FS" <JimLarsen2002@alaska.net>
To: AKQRP and other QRP Lists <jimlarsen2002@alaska.net>
Subject: [144347] Yaesu FT-817 QRP Multiband Rig for Sale
Message-ID: <3E1DC5C9.8080208@alaska.net>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii; format=flowed
Content-Transfer-Encoding: 7bit

Yaesu FT-817 QRP Multiband Rig for Sale

There is an FT-817 for sale in Anchorage with the following many extras.

Yaesu FT-817 and microphone - very little used and excellent condition...I know both current and previous owners.

- ** Miracle Whip Antenna
- ** Two sets of NiMH batteries, one with standard 1200? MaH and the other with the higher 1700? MaH rating.
- ** Pelican case for carrying, protects from hits and moisture

Has the standard antenna that comes with the rig. Antennas include AHC14 and AHC7. I don't know if these are extras or standard with the FT-817.

\$525 and if outside Anchorage, you pay USPS shipping, delivery confirmation and insurance. Go price out the FT-817, Pelican case, Miracle Whip, and NiMH batteries and you will see what a great deal this is.

Contact Randy Vallee, KL7Z, at KL7Z@gci.net or if you are seriously making an actual offer you may call his cell phone at 1-907-230-5759.

73, Jim

--

Jim Larsen, AL7FS
Anchorage, Alaska
<http://www.qsl.net/al7fs/>

Date: Thu, 09 Jan 2003 19:12:03 +0000
From: k4vib@att.net
To: qrp-l@Lehigh.EDU
Subject: [144348] Crossover distortion in Op-amps
Message-ID: <20030109191204.FLDP20003.mtiwmhc13.worldnet.att.net@mtiwebc09>

Harry Lythall at Harry's Homebrew mentioned curing crossover distortion in an op-amp by placing a resistor between the output of the op-amp and one supply

rail. He suggested a 5 to 10K resistor but 560 to 1K may be used if the opamp is driving head phones.

What does crossover distortion sound like and where does it usually occur? Is it spread evenly over the signal's variation in strength or does it usually show up on strong signals?

>From Harry's description then to cure the crossover distortion I'm connecting the 5 to 10K resistor from the output pin of the op amp to the power supply rail?

Thanks,

Bill
K4VIB

Date: Thu, 9 Jan 2003 14:16:57 -0500
From: "Hare,Ed, W1RFI" <w1rfi@arrl.org>
To: "Low Power Amateur Radio Discussion" <qrp-1@Lehigh.EDU>
Subject: [144349] RE: Question and comment about 73 and 72
Message-ID: <721D3436A7C2B344A301FD4A413C71A9BFBEA2@kosh.ARRLHQ.ORG>
content-class: urn:content-classes:message
MIME-Version: 1.0
Content-Type: text/plain;
 charset="iso-8859-1"
Content-Transfer-Encoding: quoted-printable

I bet Chuck Adams would still vote for "dit dit." :-)

73,=20
Ed Hare, W1RFI
ARRL Lab
225 Main St
Newington, CT 06111
Tel: 860-594-0318
Internet: w1rfi@arrl.org
Web: <http://www.arrl.org/tis>

> -----Original Message-----
> From: jwatkins@birch.net [mailto:jwatkins@birch.net]
> Sent: Thursday, January 09, 2003 10:45 AM
> To: Low Power Amateur Radio Discussion
> Subject: Question and comment about 73 and 72
>=20

>=20
> All,
>=20
> I don't know the history behind signing with 72 when running=20
> QRP, but suppose=20
> it is our way of indicating we use less power as we play ham radio.
>=20
> Here is my comment then. If one uses a 3:1 dash to dot ratio=20
> when transmitting=20
> cw then sending a 72's rather than 73's would take an=20
> additional 11 percent=20
> more energy from your power supply or batteries.
>=20
> Would it be better to send 75's as that would use 22 percent=20
> less energy?
>=20
> Well, unless 75's already means something terrible?
>=20
> Have a great day and enjoy the hobby!
>=20
> 72's (since I am not transmitting at this time) John N0EVH
>=20
>=20
>=20
>=20

Date: Thu, 9 Jan 2003 14:25:52 -0500
From: "Alan Fryer" <N3BJ@hotmail.com>
To: "Low Power Amateur Radio Discussion" <qrp-1@Lehigh.EDU>
Subject: [144350] FOX Tonite - N3BJ
Message-ID: <0E292RQHtQlGpf83snt00003e83@hotmail.com>
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Just a reminder, see details on my FOX announcement yesterday. K9DC and I
will be on tonite.

Good luck to all !

Alan, N3BJ
Bent Mountain, VA

Date: Thu, 09 Jan 2003 16:21:43 -0500
From: Steven Weber <kd1jv@moose.ncia.net>
To: qrp-l@lehigh.edu
Subject: [144351] Simple 40M Class E transmitter
Message-ID: <3.0.6.32.20030109162143.007bb3b0@mailhost.ncia.net>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

I just built a Class E "ish" transmitter using a 74HC02 for a xtal osc and driver to a 2N7000 final. The NOR gate doesn't drive the 2N7000 gate sufficiently high enough in voltage to get good Class E operation, but I get about 1.4 watts out with 70% efficiency at 9 volts supply. Not too bad for such a simple set up. Schematic and notes can be seen at
<<http://www.qsl.net/kd1jv/ClassE.HTM>>

I'm going to use this transmitter in combination with the "deluxe DC Rx" to make a rig to be called "The Rocker" I've managed to squeeze the whole transciever circuit on to a 2.0" x 2.7" board, which is small enough to fit inside an Altioids tin, along with a 9V battery! (hope there's enough room for jacks and keyer control switchs left over, hi)

72,
Steve, KD1JV
"Melt Solder"
White Mountains of New Hampshire
<http://www.qsl.net/kd1jv/>

Date: Thu, 9 Jan 2003 15:35:42 -0600
From: "res075cz" <res075cz@gte.net>
To: <qrp-l@lehigh.edu>
Subject: [144352] FS: Electcraft K1 Four band/ATU/NB/Stand
Message-ID: <020401c2b827\$10409b20\$0f972804@dslverizon.net>
MIME-Version: 1.0
Content-Type: text/plain;
 charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

I have a K1 with the 40/30/20/15 meter bands installed, the automatic antenna tuner (ATU), the Noise blanker (NB) and the wide range tilt stand. The serial number of the rig is 1365.

This is the third K1 I have built. All three went together with little problems. The first one had a bad capacitor which Elecraft replaced and the second K1 had a broken jack and they also replaced that. This little rig had no problems at all. I have made quite a few QSOs on it and gotten fine

reports.

I have over 60 years experience as a ham, building gear. I received very positive responses from the buyers of the other two K1s. This one looks and operates great. The antenna tuner is a joy to use.

I will sell the whole works for what I have into it as a kit of parts. The cost for everything, in kit form, is 518.00, and I will sell this one for that price. When you receive it you will only have to connect it up and away you go; no kits to build. I do recommend that you read the manuals though. By the way, all manuals are included.

I will ship it priority mail, insured and would like five dollars (5.00) to help with shipping. I will pay any more than that if it is required.

73 de Jim, K5ROV...

James (Jim) Parsons, K5ROV, CMSgt (E-9), USAF, Ret., San Angelo, TX
Ham for over 60 yrs. 90% CW
k5rov@arrl.net, QCWA, ARCI, Fists, ARRL, ARMS.
EX: W1RLA, K5FBB, K4FEO, SVOWN (CRETE), SVOWN (RHODES),
DL4NC, DL4JP, KA2FC (JAPAN), KA2JP (JAPAN).
JOHN 3:16

Date: Sun, 05 Jan 2003 10:06:16 -0500
From: James or Jade Seeber <kw3u@warwick.net>
To: JamesDuffey@comcast.net
Cc: Low Power Amateur Radio Discussion <qrp-l@Lehigh.EDU>
Subject: [144353] Re: Gell Cell Questions
Message-ID: <3E1849E7.D8DF6CB1@warwick.net>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Chargers based on the Unitrode/TI 3906
are very good and use a 3 step process. The chip is readily available;
Digi-Key carries them, and the Handbook had a very good circuit using this
chip for many years. It is missing from the most recent Handbooks. Ed?

For the building challenged(me), I recommend the A&A engineering smart
battery charger kit(i think they can be bought built), around \$60-easy build, I
put in
one simple mod to select a charge rate of 1/2 or 1amp, thus low I for my 7ah
gells,

and bit higher for my 20AH gells. It goes from charging to final charging to turning itself off-neat.

72 Jim kw3u

Date: Thu, 9 Jan 2003 15:04:20 -0700
From: "Chris Trask" <chistrask@earthlink.net>
To: "Low Power Amateur Radio Discussion" <qrp-l@lehigh.edu>
Subject: [144354] An Annoying Off-Topic Problem
Message-ID: <02fc01c2b82b\$109b1a60\$a0b33b41@ctrask>
MIME-Version: 1.0
Content-Type: text/plain;
charset="Windows-1252"
Content-Transfer-Encoding: 7bit

Back in December I looked for help on this list for an annoying problem that I have with Outlook Express, where the programme simply comes to a complete halt when downloading certain emails. I have remedied the problem for now by shutting off Outlook Express and using Netscape 4.75 to download the email. By saving the emails that cause the hangup and later examining them, I have now narrowed the problem down to being emails whose character set is GS3212 (simplified Chinese). I don't have that character set on my machine, and I cannot locate a source to obtain it.

Does anyone out there know what setting in Outlook Express to adjust to remedy this, or perhaps a web site where the GS3212 character set can be obtained? I would use Netscape full time, except that I like some of the features of Outlook Express.

Chris

What's all this
extinct stuff, anyhow?

High Performance Mixers and
Amplifiers for RF Communications

Chris Trask / N7ZWY
Principal Engineer
Sonoran Radio Research
P.O. Box 25240
Tempe, Arizona 85285-5240

IEEE Member #40274515

Email: chistrask@earthlink.net
<http://www.home.earthlink.net/~chistrask>

c__; c__; '-..'>.__

Graphics by Loek Frederiks

----- Original Message -----

From: <k4vib@att.net>

To: "Low Power Amateur Radio Discussion" <qrp-1@Lehigh.EDU>

Sent: Thursday, January 09, 2003 12:12 PM

Subject: Crossover distortion in Op-amps

> Harry Lythall at Harry's Homebrew mentioned curing crossover distortion in an

> op-amp by placing a resistor between the output of the op-amp and one supply

> rail. He suggested a 5 to 10K resistor but 560 to 1K may be used if the opamp

> is driving head phones.

>

> What does crossover distortion sound like and where does it usually occur?

> Is it spread evenly over the signals variation in strength or does it usually show

> up on strong signals?

>

> >From Harry's description then to cure the crossover distortion I'm connecting

> the 5 to 10K resistor from the output pin of the op amp to the power supply

> rail?

>

> Thanks,

>

> Bill

> K4VIB

>

Date: Thu, 9 Jan 2003 14:10:20 -0800

From: Mark Schoonover <schoon@amgt.com>

To: "'christrask@earthlink.net'" <christrask@earthlink.net>,

Low Power Amateur Radio Discussion <qrp-l@Lehigh.EDU>
Subject: [144355] RE: An Annoying Off-Topic Problem
Message-ID: <BF889CEBEFD2D511B993009027F60ABE251C86@AG-JASMINE-NT4>
MIME-Version: 1.0
Content-Type: text/plain;
charset="windows-1252"

You can download the Microsoft Global IME 5.02 for 32-bit Windows, that might do what you want... It can be found here:

<http://www.microsoft.com/windows/ie/downloads/recommended/ime/install.asp>

Try it, it might work for you...

72

.mark

Date: Thu, 9 Jan 2003 16:21:57 -0600
From: "Doc K0EVZ" <dock0evz@earthlink.net>
To: "qrp-l reflector" <qrp-l@lehigh.edu>,
"Ten-Tec Relector" <tentec@contesting.com>
Cc: "doc k0evz earthlink" <dock0evz@earthlink.net>
Subject: [144356] OMNI VI+ sold
Message-ID: <412003149222157232@earthlink.net>
MIME-Version: 1.0
Content-type: text/plain; charset=US-ASCII

Gang:

The Ten Tec OMNI VI+ has been sold. Will be going to its new home next week. The new owner rig is one lucky dude, for sure. BTW, sure wish I could accompany the rig to its new QTH, which is considerably more moderate in temperature than here. Today the weather in ND is cold at about 20F, but our wind chill is well below ZERO. Someone called this stuff "winter", if you can imagine that [g].

73,

--Doc/K0EVZ

Date: Thu, 9 Jan 2003 14:59:58 -0800
From: "Bill Jones" <kd7s@psnw.com>
To: "Low Power Amateur Radio Discussion" <qrp-l@Lehigh.EDU>
Subject: [144357] OT:Looking for EchoLink test
Message-ID: <000701c2b832\$f3582170\$5e6aadcf@RadioRoom>
MIME-Version: 1.0
Content-Type: text/plain;
 charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Friends,

I will be logged onto EchoLink beginning at 2300Z and will hang around for a half hour. I would like to test my EchoLink setup I have yet to make a contact. If there is anybody available to give me a call for testing purposes I will be connected as KD7S. Thank you.

=====
Bill Jones <><
Sanger, California
=====

Date: Thu, 9 Jan 2003 18:07:24 -0500
From: "Ken Newman" <N2CQ@Dandy.Net>
To: "W3BG" <W3BG@arrl.net>, "Norm Into" <normk8ni@neo.rr.com>,
 "N4SO" <N4SO@Juno.com>, "QRP-L Reflector" <QRP-L@lehigh.edu>,
Subject: [144358] [CONTEST] N2CQ QRP Contest Calendar - Jan 9-31
Message-ID: <005e01c2b833\$e9666540\$0b0a0a0a@D910G521>
MIME-Version: 1.0
Content-Type: text/plain;
 charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

~~~~~  
N2CQ QRP CALENDAR  
JANUARY 9-31, 2003  
~~~~~

40 METER FOXHUNTS
Fox Hunt - Thursdays - 9pm EST, 8PM CST, 7PM MST and 6PM PST.
 Info: <http://www.cqc.org/fox>
Truffle Hunt - Thursdays - 30 min before Fox Hunt

Info: http://fpqrp.com/pig_hunt.html

~~~~~  
North American QSO Party (CW) (QRP Entries Noted)

Jan 11 - 1800z to Jan 12 - 0600z

Rules: <http://www.ncjweb.com/naqprules.php>  
~~~~~

070 Club PSK Contest ... QRP Category

Jan 18 - 0000z to 2400z

Rules: <http://www.podxs.com/html/pskfest.html>
~~~~~

Michigan QRP Club Contest (CW) ... QRP Contest!

Jan 18 - 1200z to Jan 19 - 2359z

Rules: <http://www.qsl.net/miqrpclub>  
~~~~~

LZ OPEN CONTEST (CW 80M/40M) ... QRP Category

Jan 18 - 1200z to 2000z

Rules: <http://www.qsl.net/lz1fw/lzopen/index.html>
~~~~~

North American QSO Party (SSB) (QRP Entries Noted)

Jan 18 - 1800z to Jan 19 - 0600z

Rules: <http://www.ncjweb.com/naqprules.php>  
~~~~~

CQ WW 160-Meter DX Contest (CW) ... QRP Category

Jan 25 - 0000z to Jan 26 - 2400z

Rules: <http://www.cq-amateur-radio.com/infoc.html>
~~~~~

UBA DX Contest (Belgian) (SSB) ... QRP Category

Jan 25 - 1300z to Jan 26 1300z

Rules: <http://www.uba.be>  
~~~~~

Thanks to SM3CER, WA7BNM & N0AX/ARRL and others
for assistance in compiling this calendar.

Anyone may use this "QRP Contest Calendar" for your website,
newsletter, e-mail list or other media as you choose.
(Include a credit to the source of this material of course.)

72 de

Ken Newman - N2CQ

N2CQ@ARRL.NET

<http://www.njqrp.org/data/contesting.html>

<http://www.n3epa.org/Pages/Contest/contest.htm>

<http://www.qsl.net/cqrp/contests.html>

Date: Thu, 9 Jan 2003 18:25:48 -0500
From: "Glen Leinweber" <leinwebe@mcmail.cis.mcmaster.ca>
To: <k4vib@att.net>
Cc: "qrp-1" <qrp-1@lehigh.edu>
Subject: [144359] Re: Crossover distortion in Op-amps
Message-ID: <000c01c2b836\$714cd280\$07ea7182@mcmaster.ca>
MIME-Version: 1.0
Content-Type: text/plain;
 charset="Windows-1252"
Content-Transfer-Encoding: 7bit

It can sound somewhat like a noise gate (if noise levels are low, or crossover is really bad)....you don't hear much till a signal rises above the noise, and then its quite raspy.

Higher amplitude signals actually sound better. If distortion is really bad at low amplitudes, crossover distortion is the likely cause. Crossover glitches result in very high-order distortion components - you can hear the raspyness with even a small amount of crossover.

Crossover distortion is often worse when driving low impedance loads, like speakers or low-Z phones. You can try the resistor trick either to Vcc or to ground. Gotta be connected right from the output pin, before any coupling capacitors. I'll bet 10K doesn't help - should be a smaller value.

> What does crossover distortion sound like and where does it usually occur? Is
> is spread evenly over the signals variation in strength or does it usually show
> up on strong signals?
>
> >From Harry's description then to cure the crossover distortion I'm connecting
> the 5 to 10K resistor from the output pin of the op amp to the power supply
> rail?

Date: Thu, 9 Jan 2003 18:53:35 -0500

From: "Mike Yetsko" <myetsko@insydesw.com>
To: <chistrask@earthlink.net>,
"Low Power Amateur Radio Discussion" <qrp-1@lehigh.edu>
Subject: [144360] Re: An Annoying Off-Topic Problem
Message-ID: <004901c2b83a\$5413e880\$0300a8c0@charter.net>
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

> Back in December I looked for help on this list for an annoying
problem
> that I have with Outlook Express, where the programme simply comes to a
> complete halt when downloading certain emails. I have remedied the
problem
> for now by shutting off Outlook Express and using Netscape 4.75 to
download
> the email. By saving the emails that cause the hangup and later
examining
> them, I have now narrowed the problem down to being emails whose
character
> set is GS3212 (simplified Chinese). I don't have that character set on
my
> machine, and I cannot locate a source to obtain it.
>
> Does anyone out there know what setting in Outlook Express to adjust
to
> remedy this, or perhaps a web site where the GS3212 character set can be
> obtained? I would use Netscape full time, except that I like some of
the
> features of Outlook Express.
>
> Chris

Do you have the latest update for OE? I get those things all the time,
and all that happens with me is I get a 'pop-up' asking me if I want to
download a Chinese character set. I always say no, and it just continues.

If I save that message off, even just opening the email gets me a pop-up.
But it never freezes.

Hmm, I went and checked before I actually sent this mail off. I just did
a BUNCH of updates to OE last week. Took almost an hour to run
all the utilities. It's now. 6.00.2800.1106. It no longer prompts me for
the Chinese sets.

Mike

End of QRP-L Digest 2795
